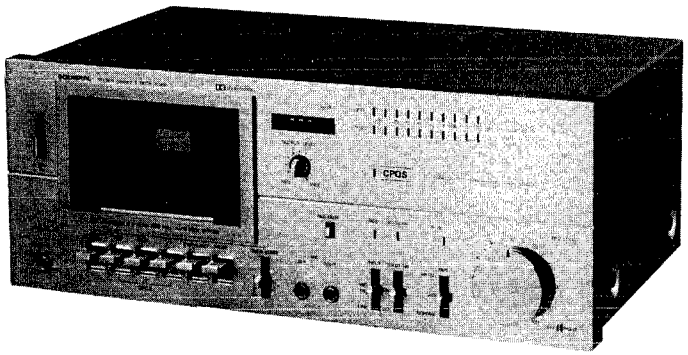
269

GENERAL SH 112/12

MODEL C800
STEREO CASSETTE DECK

SERVICE MANUAL



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CONTENTS

	Page
SPECIFICATIONS	1
ILLUSTRATION OF CONTROLS	1
DISASSEMBLY INSTRUCTIONS	2
ADJUSTMENT FOR MECHANISM	3
ALIGNMENT PROCEDURE	5
WIRING DIAGRAM	6
AU P.C.BOARD	7
LEVEL INDICATOR P.C.BOARD	8
CABINET EXPLODED VIEW	9
CASSETTE MECHANISM EXPLODED VIEW (1)	10
CASSETTE MECHANISM EXPLODED VIEW (2)	11
CABINET & CASSETTE MECHANISM PARTS LIST	15
INTEGRATED CIRCUIT INTERCONNECTION	17
SCHEMATIC DIAGRAM	

269

⚠ This indication serves as a safety critical component mark.

WARNING

FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

SPECIFICATIONS

Specifications are subject to change without notice.

ELECTRICAL PERFORMANCE

Power Source . . . . . AC 220V, 50 Hz (For Eur.)
AC 240V, 50 Hz (For Aus.)
Power Consumption 12W
Dimensions . . . . . 402 (W) x 155 (H) x 274 (D) mm
Weight . . . . . 6 kg
Cassette C-30, C-60, C-90
Tape Speed . . . . . 4.76 cm/sec
Fast Forward Time . . . . . Less than 100 sec (with C-60)
Rewind Time . . . . . Less than 100 sec (with C-60)

Recording System . . . . . AC bias, 85 kHz
Erasing System . . . . . AC erasing
Terminals :
LINE IN 70mV (80kΩ)
L-MIC-R, PB/REC (DIN) . . . 0.7 mV (6.8kΩ)
LINE OUT . . . . . 600mV(47k) } with Dolby tape
PHONES . . . . . 2 mW (8Ω) } MTT-150

Wow and Flutter . . . . . Less than 0.07% WRMS
Signal-To-Noise Ratio . . . . . 50 dB (Normal) } Dolby OFF
52 dB (CrO_2) } Dolby OFF
52 dB (Metal) } Dolby OFF

Dolby Effect . . . . . 9.0 dB
Frequency Response . . . . . 40 ~ 12,500 Hz (Normal)
40 ~ 14,000 Hz (CrO_2)
40 ~ 15,000 Hz (Metal)
Distortion . . . . . 1.5% (Normal, Metal)
2% (CrO_2)
Subfunctions :
Tape Select Switch Norm/CrO_2/Metal
Dolby NR . . . . . Dolby NR (ON/OFF)
Input Select . . . . . MIC (DIN)/LINE IN
Green LED Dolby NR/Power/Metal/CPQS indicator
Red LED Recording Indicator
3-digit Tape Counter
Semiconductors :
Transistors 10
ICs 7
Diodes . . . . . 8 + 1 stacked diode
LEDs 25

NOTE : Dolby is a trade mark of Dolby Laboratories Inc.

ILLUSTRATION OF CONTROLS

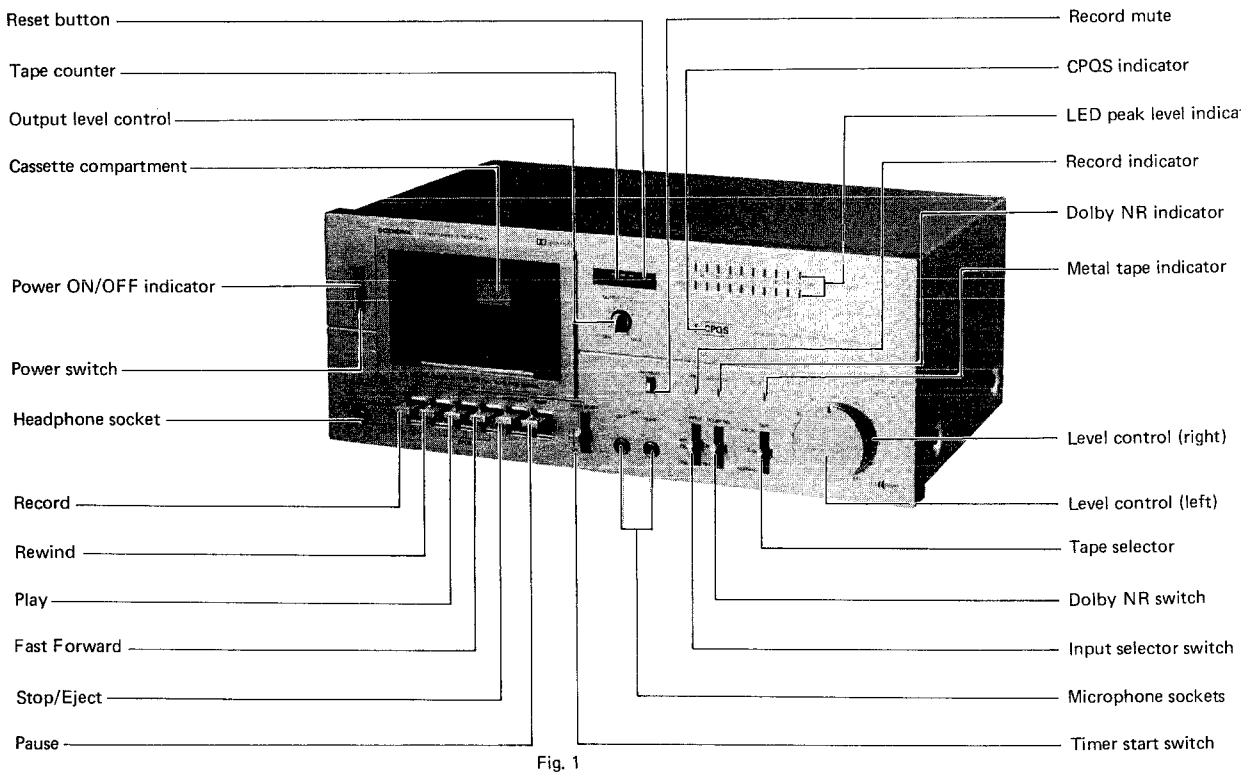


Fig. 1

DISASSEMBLY INSTRUCTIONS

1. To expose the copper side of Play/Record P.C.Board. (Refer Cabinet Exploded View, Page 8) (Refer Fig. 2)
   1. Remove 4 screws (Ref. No. 228) and remove cover (Ref. No. 151)
   2. Remove P.C.Board fixing screws. (Ref. No. 231)
   3. Remove Nylon rivet 1 and 2 of which are fixing IN/OUT jack. (Ref. No. 167)
   4. Remove all screws marked with * in Fig. 2.

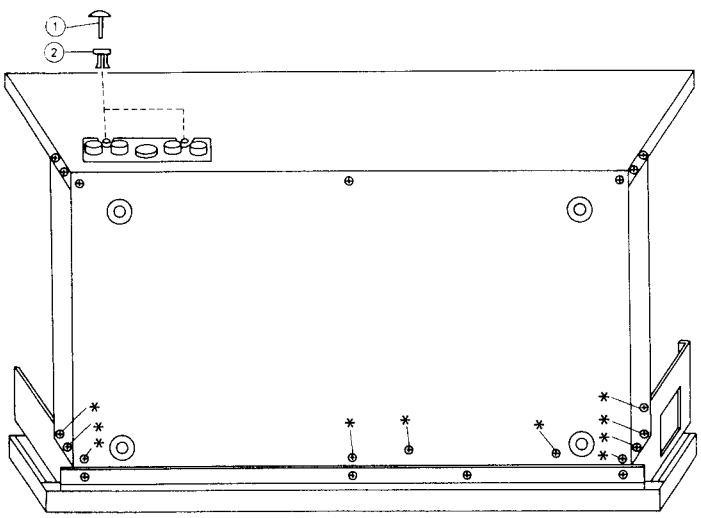


Fig. 2

ADJUSTMENT FOR MECHANISM

Play (Reproduction) Timing Adjustment
(Refer Fig. 3)

1. Slowly depress the play (▶) button. Confirm that the clearance between Capstan and Pinch-roller is within 0 ~ 1 mm when the Take-up reel begins to turn.

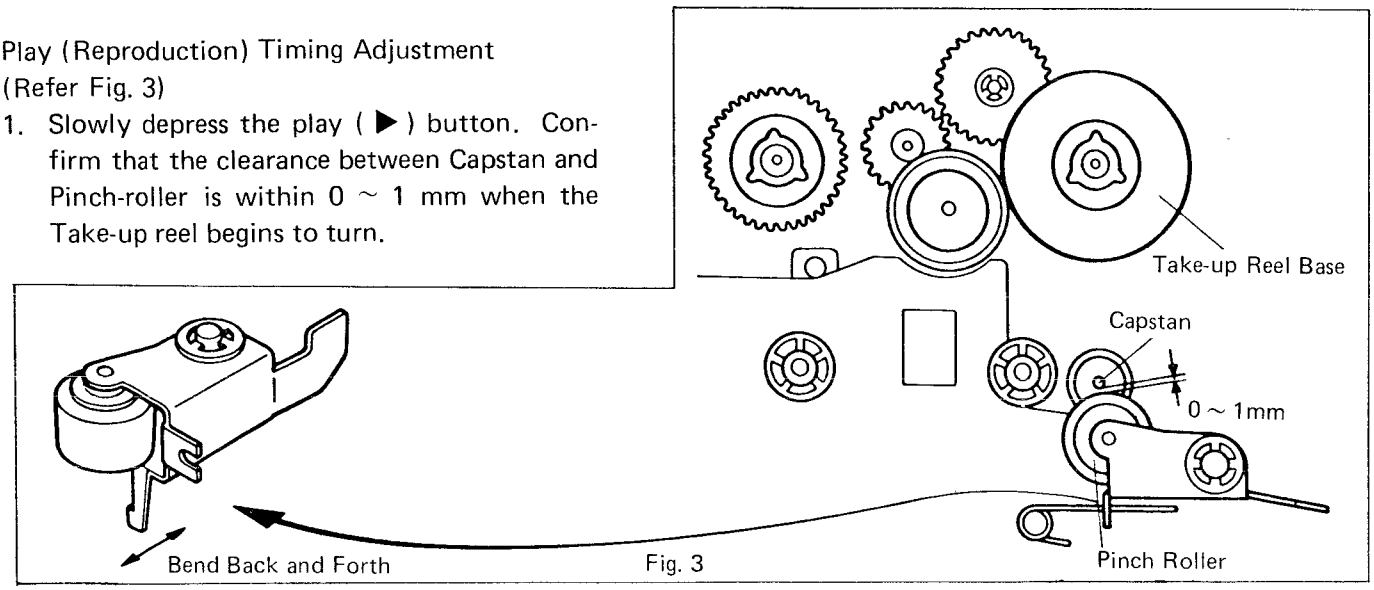


Fig. 3

2. Adjust the lower portion of the Pinch roller with bend back and forth when item 1 is not satisfied.

Pause Timing Adjustment
(Refer Fig. 4)

1. Slowly depress the Pause button. Confirm that the clearance between Capstan and Pinch roller is within 0 ~ 1 mm when the Take-up Idler parts with Take-up reel base.

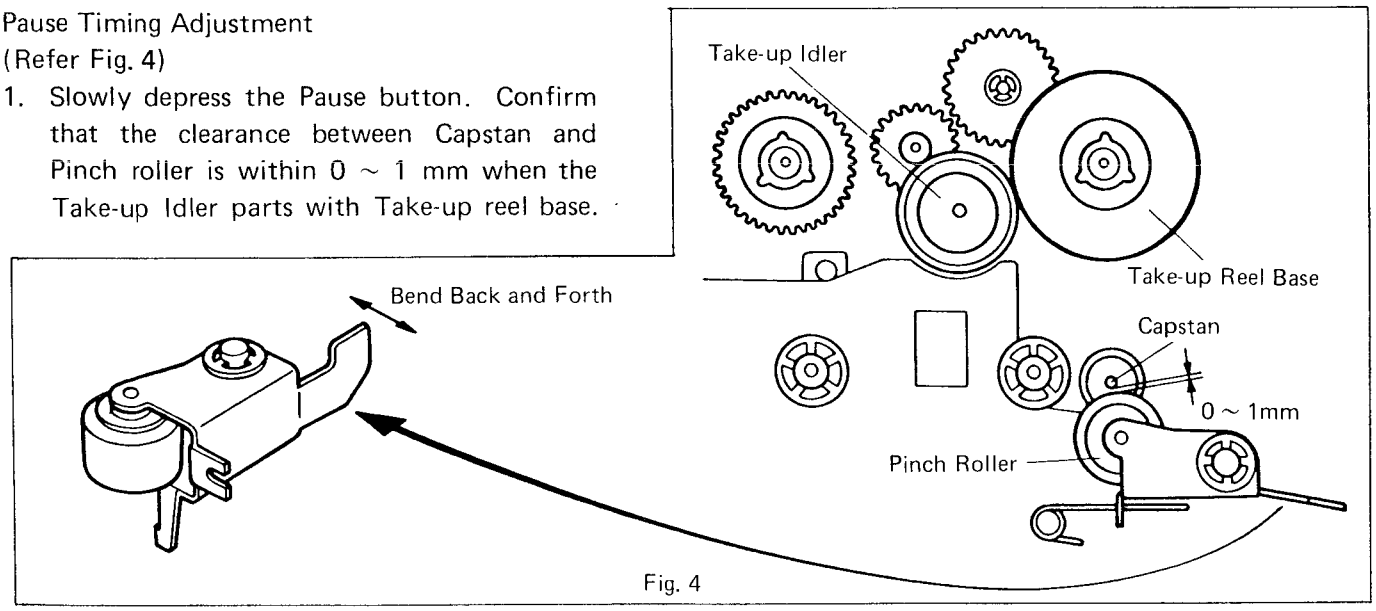


Fig. 4

2. Adjust the rearward portion of the Pinch roller with bend back and forth when item 1 is not satisfied.

Pinch Roller Pressure Adjustment
(Refer Fig. 5)

1. Set in Play condition.
2. Parts the Pinch roller from the Capstan by pressing the Tension Gauge (500g) to the Position indicated in the illustration.
3. Confirm the Gauge value is whithin 300 ~ 500g when the Pinch roller touch on Capstan by slowly loosen the Gauge in opposite direction.
4. Bend or replace the Spring for Pinch roller Pressure when item 3 is not satisfied.

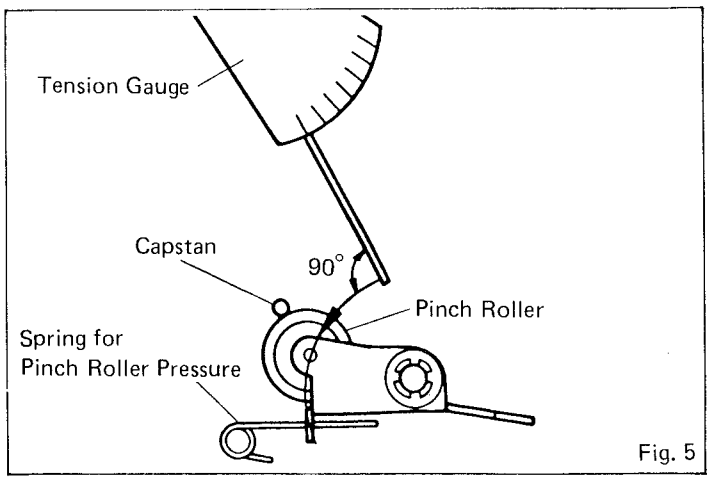


Fig. 5

Adjustment of Tape Speed
(Refer Fig. 7)

1. Reproduce a Test Tape (MTT-111, 3 KHz).
   Note : Use approx in mid portion of the Test Tape.
2. Connect Frequency Counter to the both ends of 50 KΩ resistor connected to the Line out terminal (J103 or J203).
3. Adjust a variable resistor through an adjusting hole which is positioned on the bottom side of the motor with a flat head screw driver so as to obtain a 3015 ±45 Hz in reproduced condition.

Note : Confirm that the impurities are not stained with the Motor-pulley, Drive-belt, Fly-wheel, Rewind idler or Rewind reel base, etc.

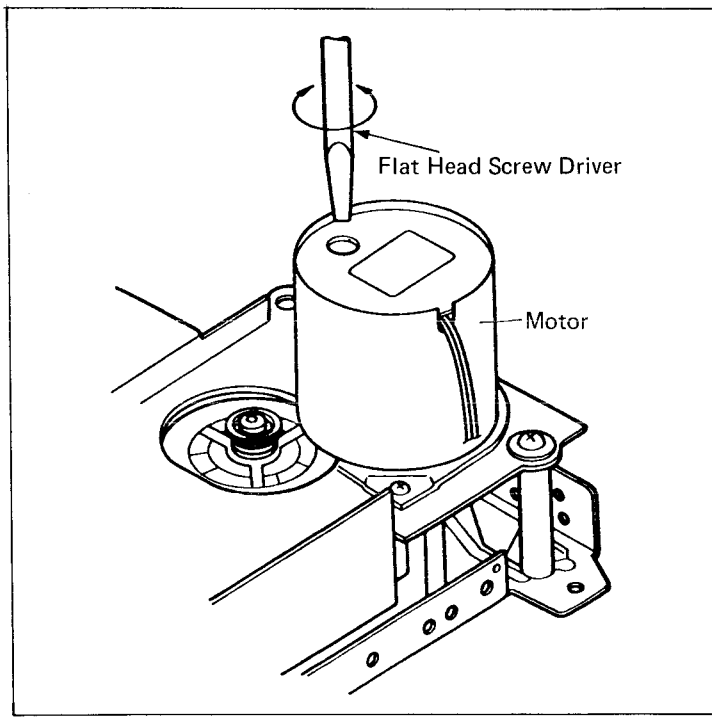


Fig. 7

NOTE : To clean the head.
The heads can be reached for cleaning when the cassette compartment's transparent facing panel is removed by pulling it upwards. In this case open the cassette compartment first by pressing Eject button. (see Fig. 8)
To avoid damage to the sensitive head surfaces it is advisable to use "Q-Tips" (small wooden sticks wrapped with cotton wool) soaked in alcohol.

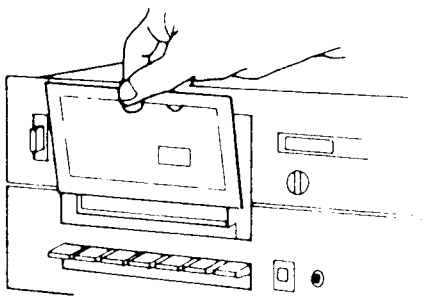


Fig. 8

ALIGNMENT PROCEDURE

Rear View

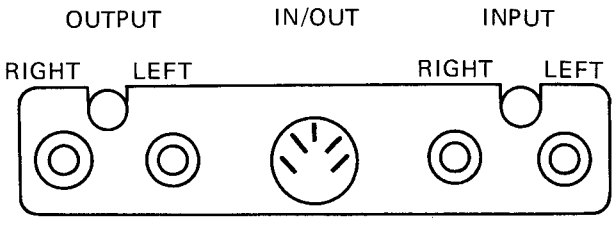


Fig. 9

1. Bias Oscillator Frequency
   Connect a frequency counter to the terminals of the erase head and adjust the oscillator Coil (T101) to an oscillating frequency of 85 KHz ±5 KHz (See Fig. 10).

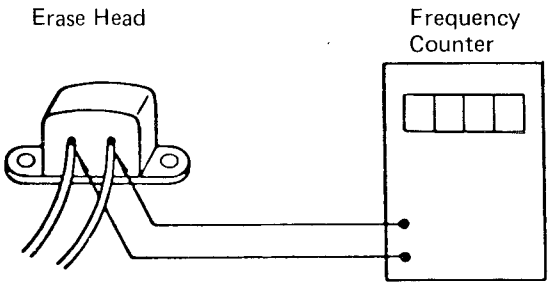
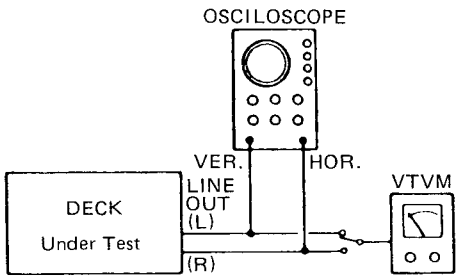


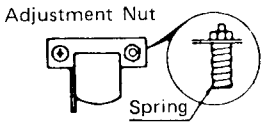
Fig. 10

2. Head Azimuth
   Play back the Test Tape of 10 KHz (MTT-114 or equivalent) and rotate the Adjusting Nut (See Fig. 12) for maximum output (See Fig. 11).
   Use Locking varnish on adjustment nut after adjusting.



Head Azimuth Adjustments Location

Fig. 11



Head Phase Check Setup

Fig. 12

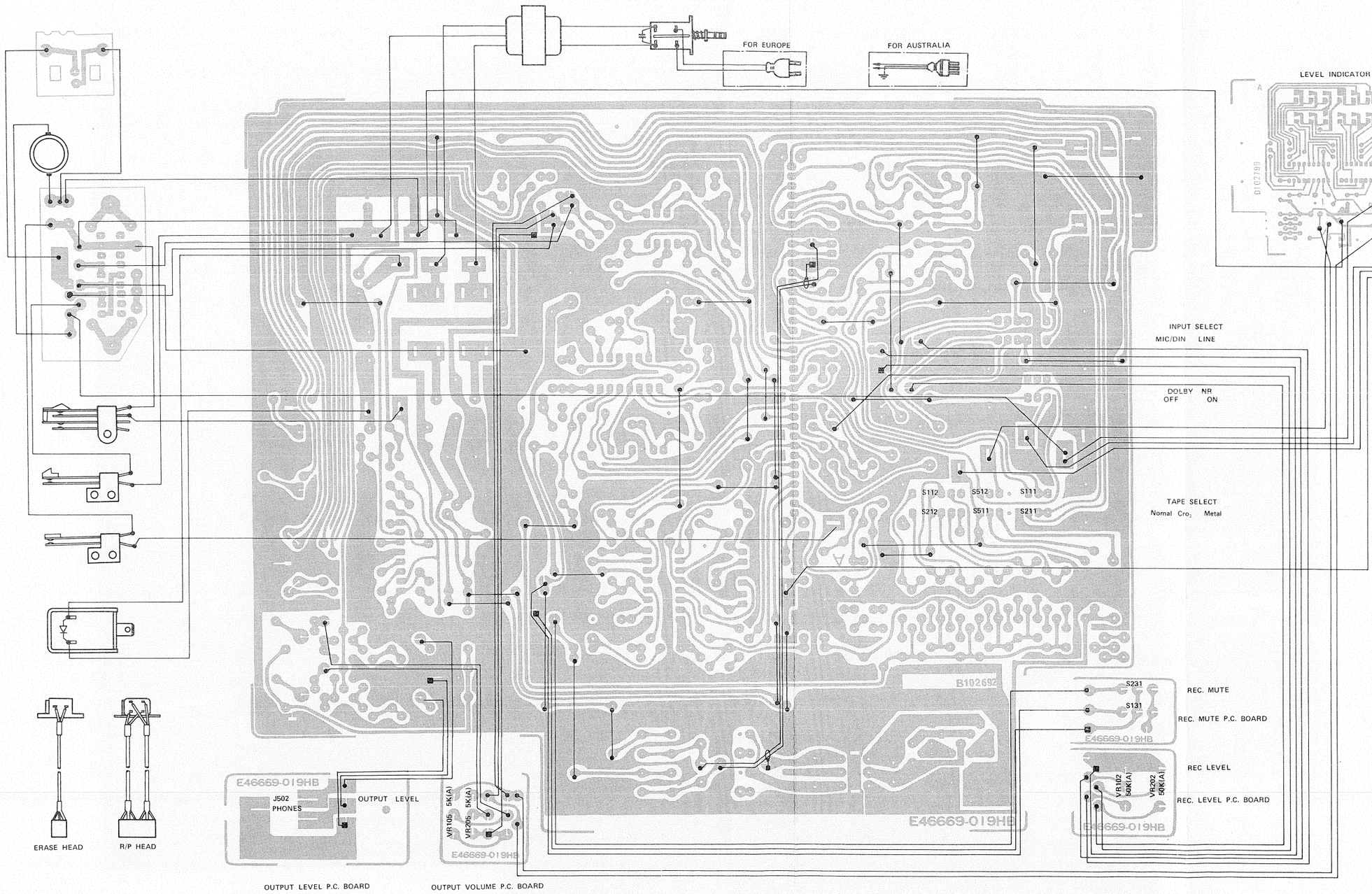
3. Playback Level
   Playback the Test Tape of Dolby Level Calibration (MTT-150 or equivalent) and adjust VR101 (left channel) and VR201 (right channel) until an output of 600 mV is obtained at the LINE OUT terminals with the O/P control at max level.

4. Recording Current
   Load a C90 Blank tape (MTT-502 or equivalent). Set the Tape Selector Switch to NORM and apply an input of −20 dB, 400 Hz to the LINE IN terminals (See Page 1). In the record mode adjust the Record Level control (See Page 1) until the output of 420 mV is obtained at the LINE OUT terminal (See Fig. 9)
   Play the tape back and adjust VR103 (left channel) and VR203 (right channel) until the output at the LINE OUT terminals is 420 mV [at this time OUT PUT LEVEL control (page 1) is at maximum and the semifixed resistor for Bias Current adjustment: VR104 (left channel) and VR204 (right channel) should be at the mechanical mid-position].

5. Bias Current
   Load a C90 Blank tape (MTT-502 or equivalent). Set the TAPE SELECTOR switch to NORM and the DOLBY NR switch (See Page 1) to ON. Apply an input of −20 dBs to the LINE IN terminals (See Fig. 9) and adjust the RECORD LEVEL control (See Page 1) until the output of 600 mV is obtained at the LINE OUT terminals (See Fig. 9) at 400 Hz. Then apply an input of −45 dBs (1 KHz and 10 KHz) to the LINE IN terminals and record.
   Play the tape back and adjust VR104 (left channel) and VR204 (right channel) until the playback outputs of the LINE OUT terminals of 1 KHz and 10 KHz are of the same level [at this time OUTPUT LEVEL control (page 1) is at maximum].

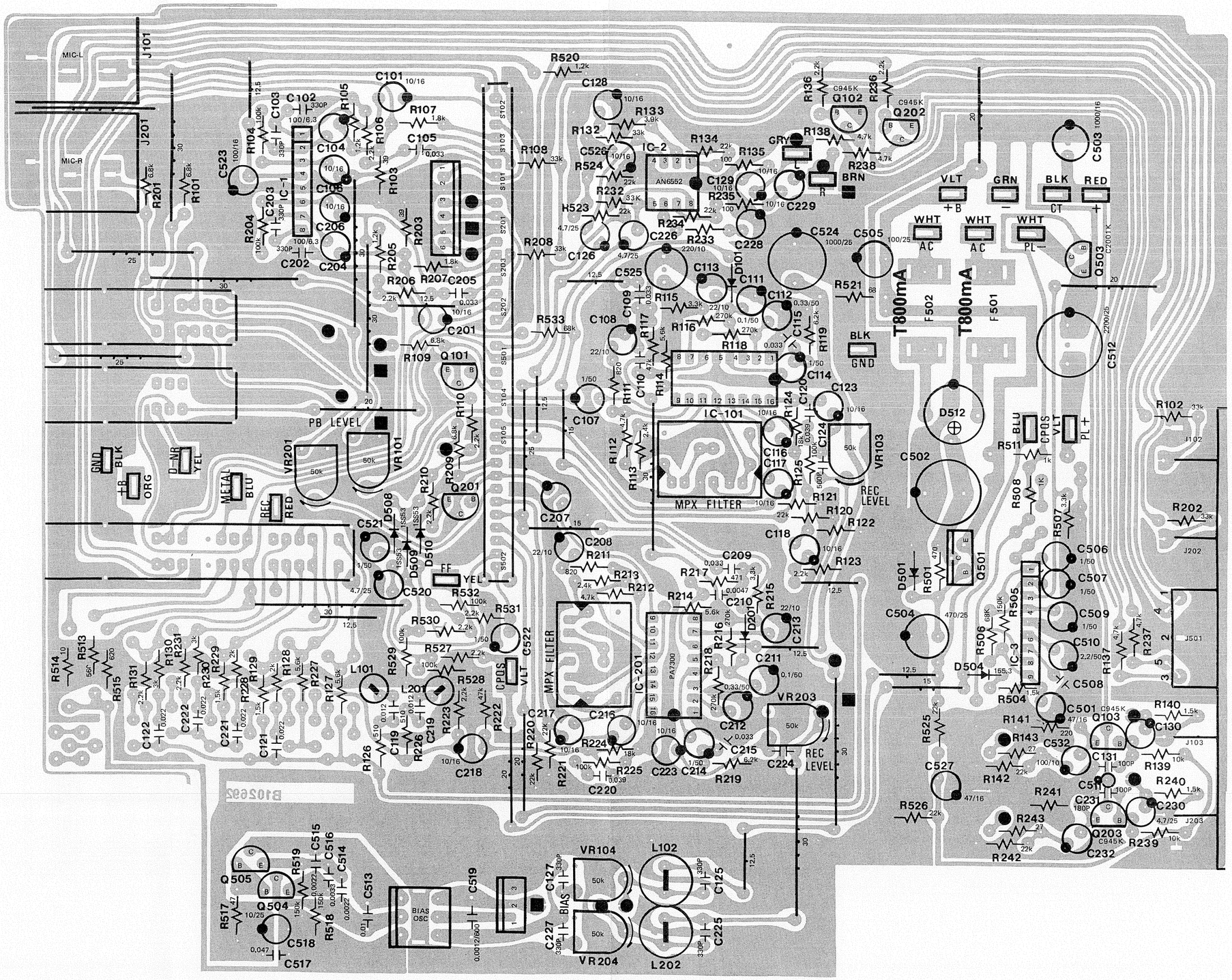
6. Peak Meter
   Play back the Dolby Level Calibration tape (MTT-150 or equivalent) and adjust VR106 (left channel) and VR206 (right channel) so as to just illuminate the point marked with ▯▯ LED of Peak Level.

WIRING DIAGRAM



C800

AU P.C. BOARD



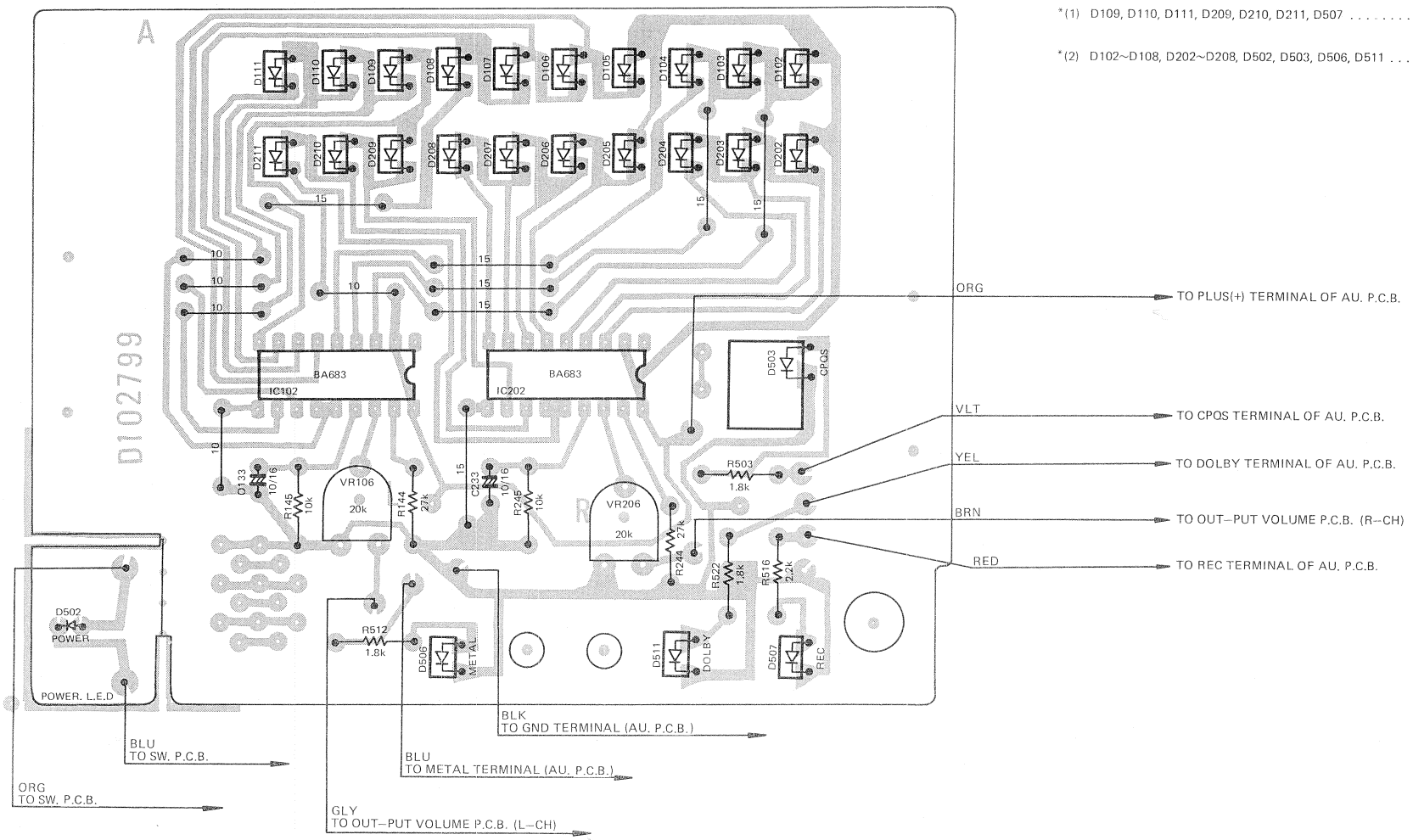
IC101, IC201

1	OV
2	15.6V
3	16.6V
4	7.1V
5	
6	6.8V
7	6.8V
8	6.8V
9	7.3V
10	6.8V
11	6.8V
12	6.8V
13	6.6V
14	6.8V
15	6.3V
16	8.5V

IC-1, IC-2

1	1.3V
2	0.8V
3	3.8V
4	16.4V
5	OV
6	3.8V
7	0.8V
8	1.3V

LEVEL INDICATOR P. C. BOARD



*(1) D109, D110, D111, D209, D210, D211, D507 ..... SR535D (RED)

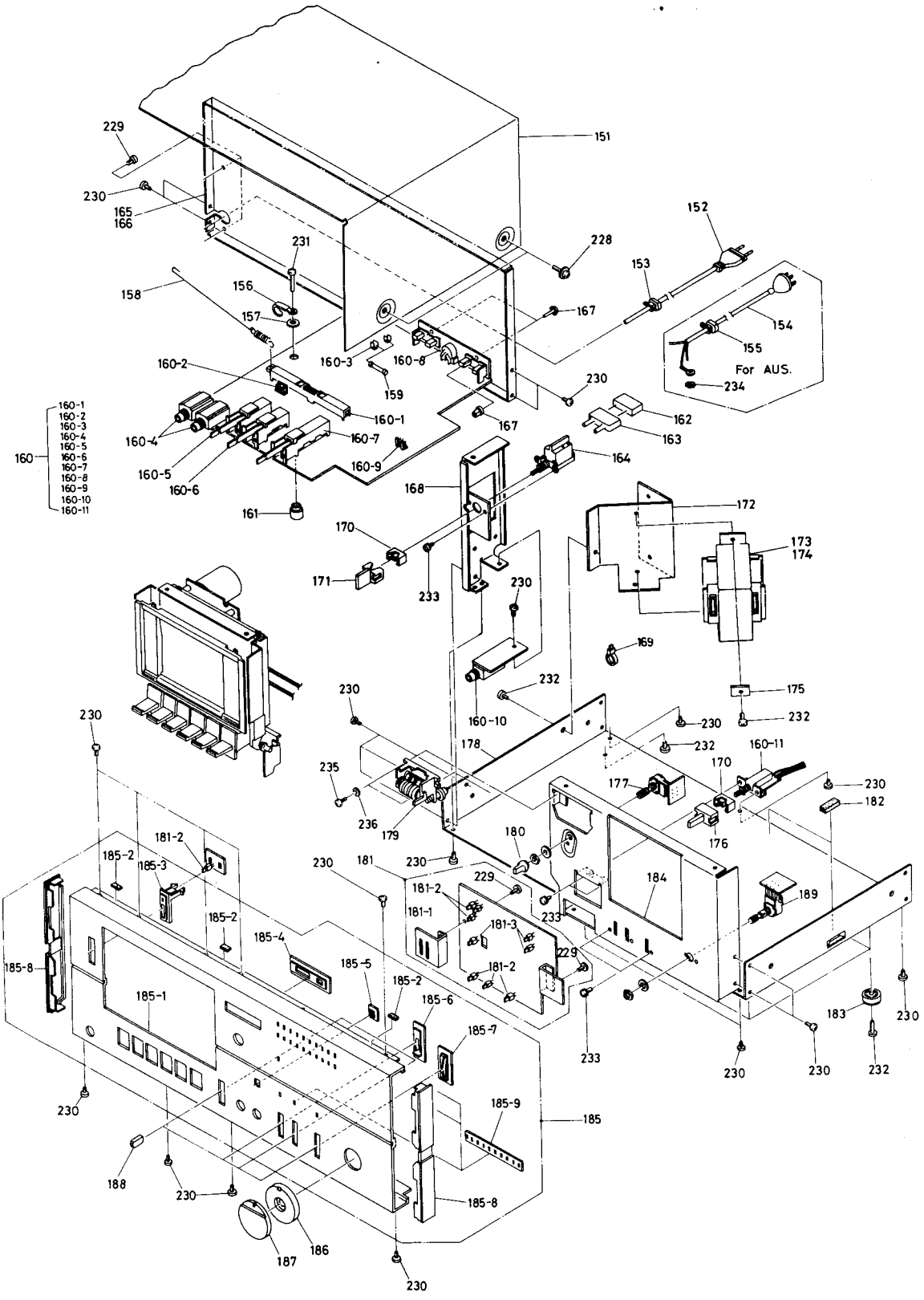
*(2) D102~D108, D202~D208, D502, D503, D506, D511 ..... SG235D (GREEN)

IC102, 201

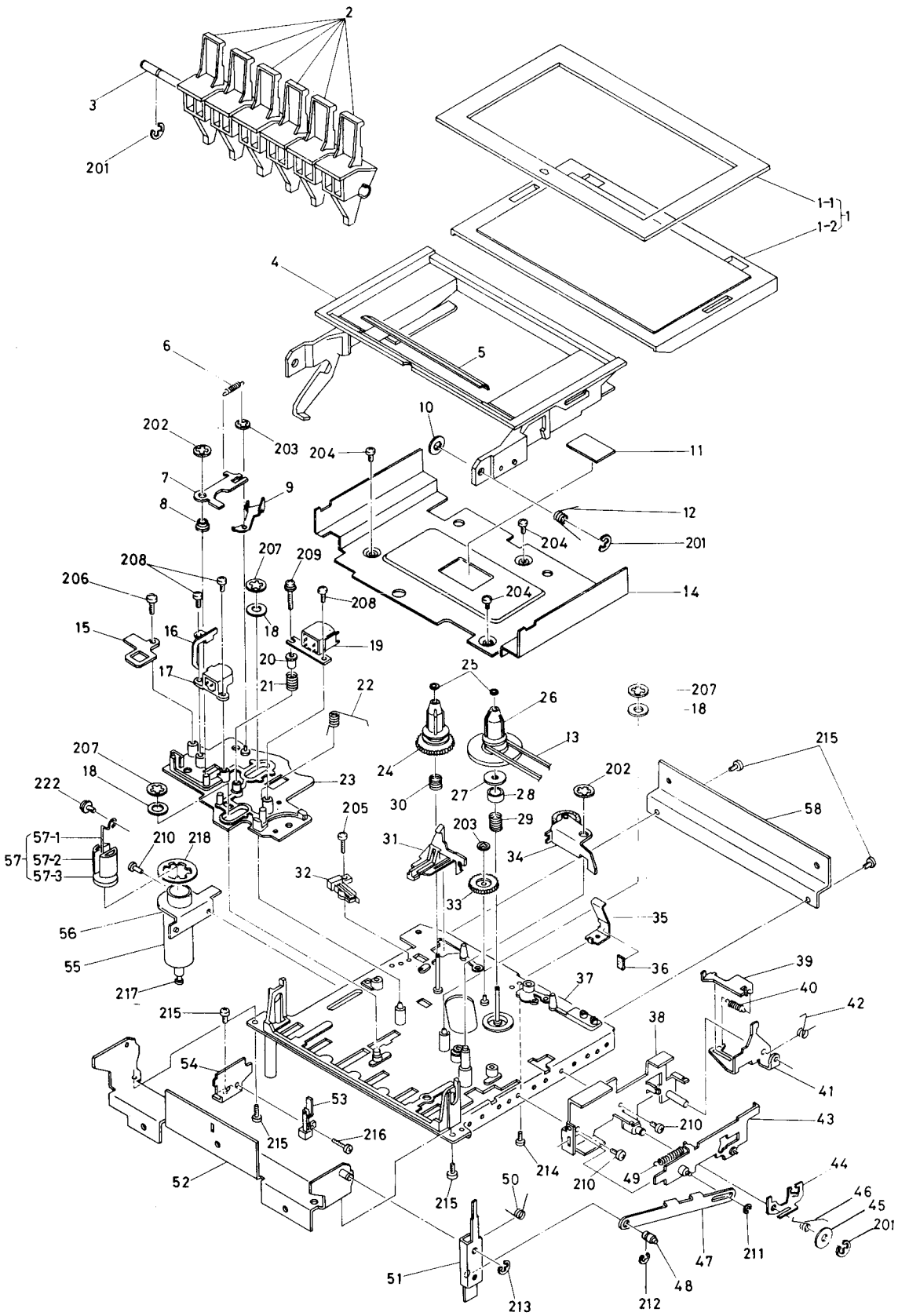
1	13.4V
2	6.2V
3	10.0V
4	1.9V
5	8.7V
6	8.7V
7	10.1V
8	11.5V
9	0V
10	4.8V
11	6.9V
12	9.0V
13	11.2V
14	7.0V
15	9.2V
16	11.3V
17	13.4V
18	—

C800

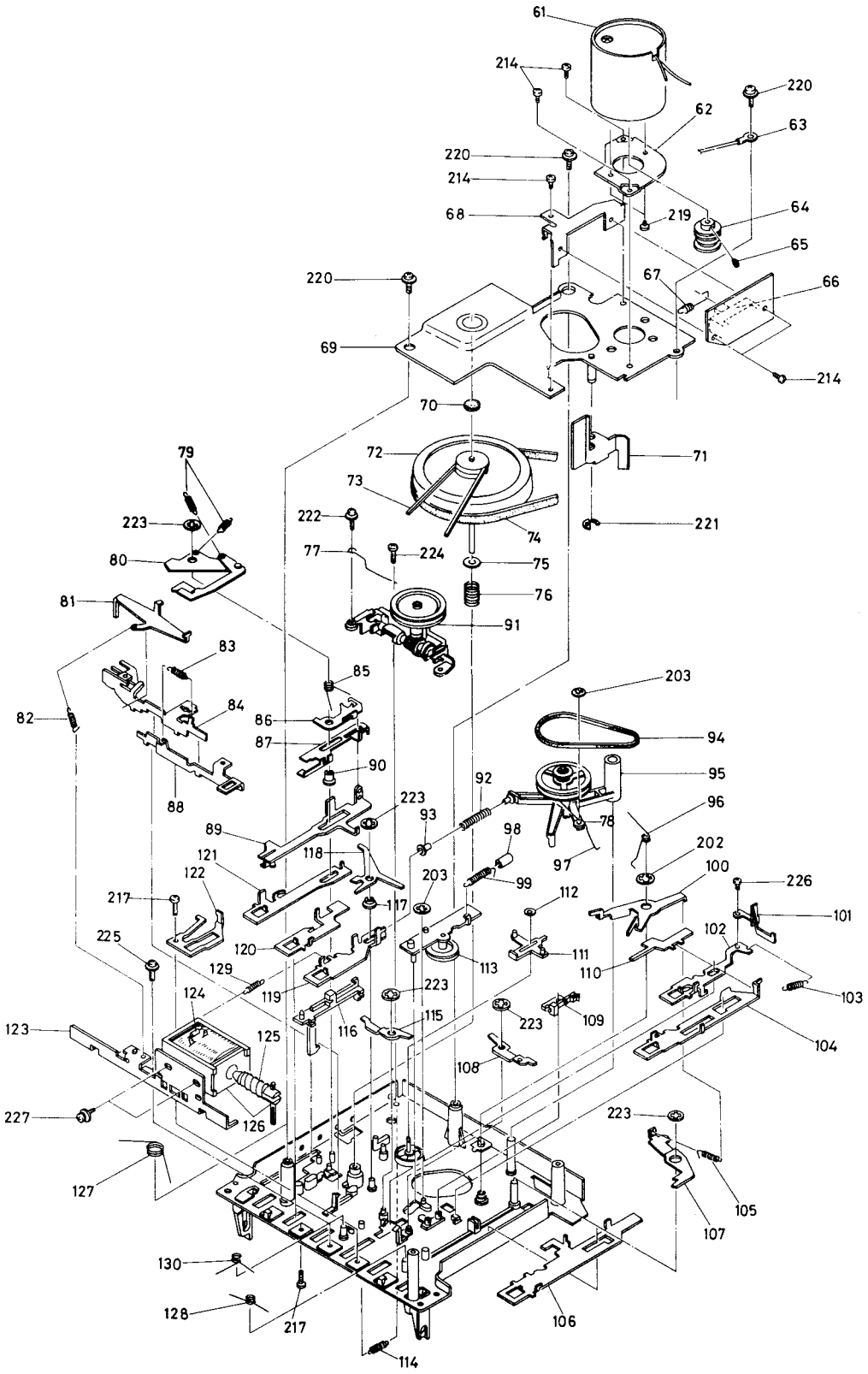
CABINET EXPLODED VIEW



CASSETTE MECHANISM EXPLODED VIEW (1)



CASSETTE MECHANISM EXPLODED VIEW (2)



CABINET & CASSETTE MECHANISM PARTS LIST

Ref. No.	Part No.	Description
1	KGE014740	Cassette door ass'y
1-1	KGD102730	Cassette door
1-2	KGD102731	Door decoration plate
2	KGC102702	Button
3	PBE14305	Button shaft
4	KGB102729	Loading case
5	KGE102738	Decoration plate
6	PBE13994	Tension coil spring
7	PBE13980	Switch lever A
8	PBE13986	Collar
9	PBE13981	Switch lever B
10	KGE98674	Washer
11	KGE102739	Mirror
12	PBE13934	Door arm spring
13	PBE13380	Square belt
14	KGD102737	Separation plate
15	PBE14020	Head protector
16	KGE102827	Earth plate
17	KGE47376	Erase head
18	PBE13869	Washer ϕ5.2xϕ10xt0.5
19	KGE47290	Record head
20	PGEC24x3860	Tube rivet
21	PBE13666	Compression coil spring
22	PBE13641	Pinch arm spring
23	PBE1161	Head base calking
24	PBE01054	Supply reel ass'y
25	PGWM16x040020	Washer ϕ1.6xϕ4xt0.2
26	PBE01129	Take-up reel ass'y
27	PBE14265	Nylon washer ϕ5.2xϕ12xt0.35
28	PBE13723	Clutch plate
29	PBE6009	Compression coil spring
30	PBE6003	Brake spring
31	PBC1077	Inter-lock
32	MSW0058	Leaf switch (S551)
33	PBE14337	Idler gear
34	PBE01276	Pinch arm ass'y (C)
35	PBE13722	Crossarm leaf spring
36	PBE14113	Cushion
37	PBD0591	Mechanical base ass'y
38	PBD0650	Timer plate calking ass'y (B)
39	PBE13850	Cancel lever T
40	PBE13993	Cancel lever T spring
41	PBE13960	Reset lever
42	PBE13964	Reset spring
43	PBD0651	Timer lever calking ass'y (B)
44	PBD1442	Lock plate
45	PBE14295	Washer
46	PBE13965	Lock plate spring
47	KGE102748	Link
48	KGE102869	Shaft
49	PBE13992	Timer lever spring
50	KGE102755	Twist coil spring
51	KGE102747	Timer lever
52	KGE014755	Fitting plate calking ass'y
53	KGD102795	Leaf switch (S531)
54	KGE102743	Button shaft bearing
55	PBD1495	Cylinder
56	PBE13925	Cylinder fitting plate
57	PBE01149	Piston ass'y
57-1	PBE13933	Coupling rod
57-2	PBE13932	Piston
57-3	PBE14011	O-ring
58	KGE102742	Fitting plate B

Ref. No.	Part No.	Description
61	KGE47387	Motor
62	PBE13927	Motor holder
63	PBE3909	Lead wire
64	PBE14035	Motor pulley
65	PGSS06A2003	Fitting screw M2x3
66	PBE62344	Slide switch
66	PBE3940	Muting P.C.Board
67	PBE13939	Tension coil spring
68	PBE13923	Switch plate
69	PBD0539	Flywheel bracket calking ass'y
70	PBE14058	Thrust plate
71	PBE13924	Lever
72	PBE01154	Flywheel ass'y
73	PBE14033	Square belt
74	PBE14031	Flat belt
75	PBE13880	Washer ϕ2.1xϕ10xt0.25
76	PBE13864	Compression coil spring
77	PBE13968	Pause spring
78	PGWM22x060020	Washer ϕ2.2xϕ6xt0.2
79	PBE13996	Pause lever (B) spring
80	PBE01330	Cancel lever calking ass'y
81	PBD1435	Stop lever
82	PBE13649	Stop lever spring
83	PBE13994	Stopper spring A B
84	PBD0550	Button stopper ass'y A
85	PBE6027	Lock plate spring (B)
86	PBD1442	Lock plate
87	PBD1571	Cancel lever (S)
88	PBD1501	Button stopper B
89	PBD1499	PAUSE lever (B)
90	PBE14405	PAUSE collar
91	PBD0551	Auto stop mechanism ass'y
92	PBE6011	Compression coil spring
93	PGEE26x5360	Tube rivet
94	PBE14032	Square belt
95	PBD0657	Driving arm ass'y
96	PBE6040	Switch plate spring
97	PBE14024	Twist spring
98	PBE14114	Tube ϕ4xℓ12
99	PBE13662	Tension coil spring
100	PBE13693	Switch plate
101	PBE13928	PLAY lever spring
102	PBD1536	PLAY lever
103	PBE14268	REV spring
104	PBD1454	REW lever
105	PBE13863	Tension coil spring
106	PBD1456	REC lever
107	KGE14396	REC plate
108	PBE13954	REV lever (B)
109	MSW1105	Leaf switch (S541)
110	PBE14351	REV plate
111	PBD1516	Sensor (B)
112	PBE14117	Washer
113	PBE01248	Idler ass'y (B)
114	PBE14013	Latch lever spring
115	PBE13953	CUE lever (B)
116	PBD1439	Latch lever
117	PBE13646	FF collar
118	PBD1503	PAUSE plate
119	PBD1455	FF lever
120	PBD1452	SE lever
121	PBD1498	PAUSE lever (A)
122	PBE14263	Reinforce plate

PARTS LIST (Electrical)

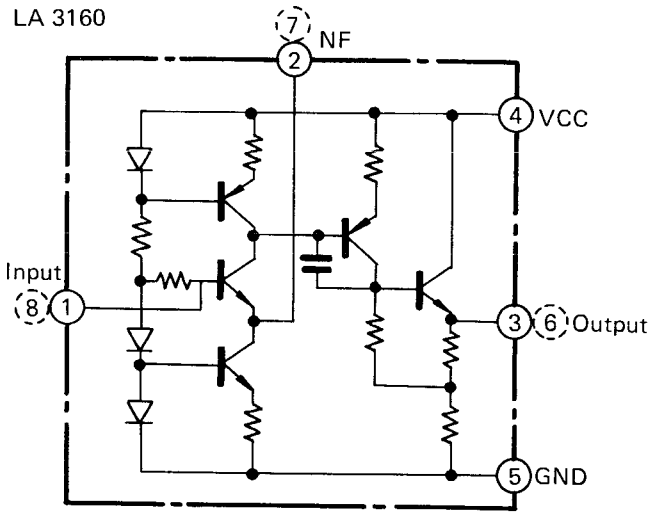
Ref. No.	Part No.	Description
Capacitors		
C101,106,116, 117,118,128, 129,133,201, 206,216,217, 218,228,229, 233,526	KGE35794	Electrolytic 16V 10μF
C102,103,125, 127,202,203, 225,227	KGE33413	Ceramic 50V 330pF
C104,204	KGE35772	Electrolytic 6.3V 100μF
C105,205	KGE6264	Mylar 50V 0.033μF
C107,207,507	KGE35731	Electrolytic 50V 1μF
C108,113,208, 213	KGE35782	Electrolytic 10V 22μF
C109,115,209, 215	KGE35529	Mylar 50V 0.033μF
C110,210	KGE35508	Mylar 50V 0.0047μF
C111,211	KGE35727	Electrolytic 50V 0.1μF
C112,212	KGE35729	Electrolytic 50V 0.33μF
C114,214,506, 509,521,522	KGE35831	Electrolytic 50V 1μF
C119,219	KGE31126	Mylar 50V 0.012μF
C120,220	KGE10133	Mylar 50V 0.039μF
C121,122,221, 222	KGE3224	Mylar 50V 0.022μF
C123,223	KGE35710	Electrolytic 16V 10μF
C124,224	KGE33484	Ceramic 50V 560pF
C126,130,226, 230,520	KGE35807	Electrolytic 25V 4.7μF
C131,231,511	KGE33466	Ceramic 50V 100pF
C132,232	KGE35785	Electrolytic 10V 100μF
C501,527	KGE35797	Electrolytic 16V 47μF
C502	KGE35828	Electrolytic 35V 1000μF
C503	KGE35802	Electrolytic 16V 1000μF
C504	KGE35815	Electrolytic 25V 470μF
C505	KGE35812	Electrolytic 25V 100μF
C508	KGE33563	Ceramic 25V 0.01μF
C510	KGE35832	Electrolytic 50V 2.2μF
C512	KGE35817	Electrolytic 25V 2200μF
C513	KGE1181	Mylar 50V 0.01μF
C514,515	KGE10125	Mylar 50V 0.0022μF
C516	KGE5071	Mylar 50V 0.0033μF
C517	KGE10577	Mylar 50V 0.047μF
C518	KGE35808	Electrolytic 25V 10μF
C519	KGE36187	Non-inductive mylar 600V 0.0012μF
C523	KGE35798	Electrolytic 16V 100μF
C524	KGE35816	Electrolytic 25V 1000μF
C525	KGE35786	Electrolytic 10V 220μF
Resistors		
R101,109,201, 209	KGE25780	Carbon film 1/4W 6.8KΩ
R102,108,132, 202,208,232	KGE25796	Carbon film 1/4W 33KΩ
R103,203	KGE25726	Carbon film 1/4W 39Ω
R104,125,204, 225,528,529, 532	KGE25808	Carbon film 1/4W 100KΩ
R105,205,520	KGE25762	Carbon film 1/4W 1.2KΩ
R106,110,123, 136,131,206, 210,223,231, 236,527,530, 531	KGE25768	Carbon film 1/4W 2.2KΩ
R107,207,502, 503,512,522	KGE25766	Carbon film 1/4W 1.8KΩ
R111,211	KGE25758	Carbon film 1/4W 820Ω
R112,137,138, 212,237,238	KGE25776	Carbon film 1/4W 4.7KΩ
R113,213	KGE25769	Carbon film 1/4W 2.4KΩ
R114,127,214, 227	KGE25778	Carbon film 1/4W 5.6KΩ
R115,215,507	KGE25772	Carbon film 1/4W 3.3KΩ
R116,118,216, 218	KGE25818	Carbon film 1/4W 270KΩ
R117,122,217, 222	KGE25800	Carbon film 1/4W 47KΩ
R119,219	KGE25779	Carbon film 1/4W 6.2KΩ
R120,121,134, 142,220,221, 234,242,523, 524~526	KGE25792	Carbon film 1/4W 22KΩ
R124,224	KGE25790	Carbon film 1/4W 18KΩ
R126,226	KGE25753	Carbon film 1/4W 510Ω
R128,228	KGE25767	Carbon film 1/4W 2KΩ
R129,140,229, 240,504	KGE25764	Carbon film 1/4W 1.5KΩ
R130,230	KGE25771	Carbon film 1/4W 3KΩ
R132,232	KGE25796	Carbon film 1/4W 33KΩ
R133,233	KGE25774	Carbon film 1/4W 3.9KΩ
R135,235	KGE25736	Carbon film 1/4W 100Ω
R139,145,239, 245	KGE25784	Carbon film 1/4W 10KΩ
R141,241	KGE25744	Carbon film 1/4W 220Ω
R143,243	KGE25722	Carbon film 1/4W 27Ω
R144,244	KGE25794	Carbon film 1/4W 27KΩ
R501	KGE25752	Carbon film 1/4W 470Ω
R505,518,519	KGE25812	Carbon film 1/4W 150KΩ
R506,533	KGE25804	Carbon film 1/4W 68KΩ
R508,511	KGE25760	Carbon film 1/4W 1KΩ
R513	KGE25754	Carbon film 1/4W 560Ω
⚠ R514	KGE26557	Fuse resistor 1/4W 10Ω
R515	KGE25755	Carbon film 1/4W 620Ω
R516	KGE25768	Carbon film 1/4W 2.2KΩ
R517	KGE25728	Carbon film 1/4W 47Ω
⚠ R521	KGE26567	Fuse resistor 1/4W 68Ω
VR101,103, 104,201, 203,204	KGE20559	Semi-fixed variable 50KΩ (B)
VR106,206	KGE20558	Semi-fixed variable 20KΩ (B)
Inductors		
L101,201	KGE40148	Micro inductor 8.2mH
L102,202	KGE47294	Micro inductor 10mH
FB101,201	KGE47398	Filter brock
T101	KGE47386	Bias Oscillator Coil

C800

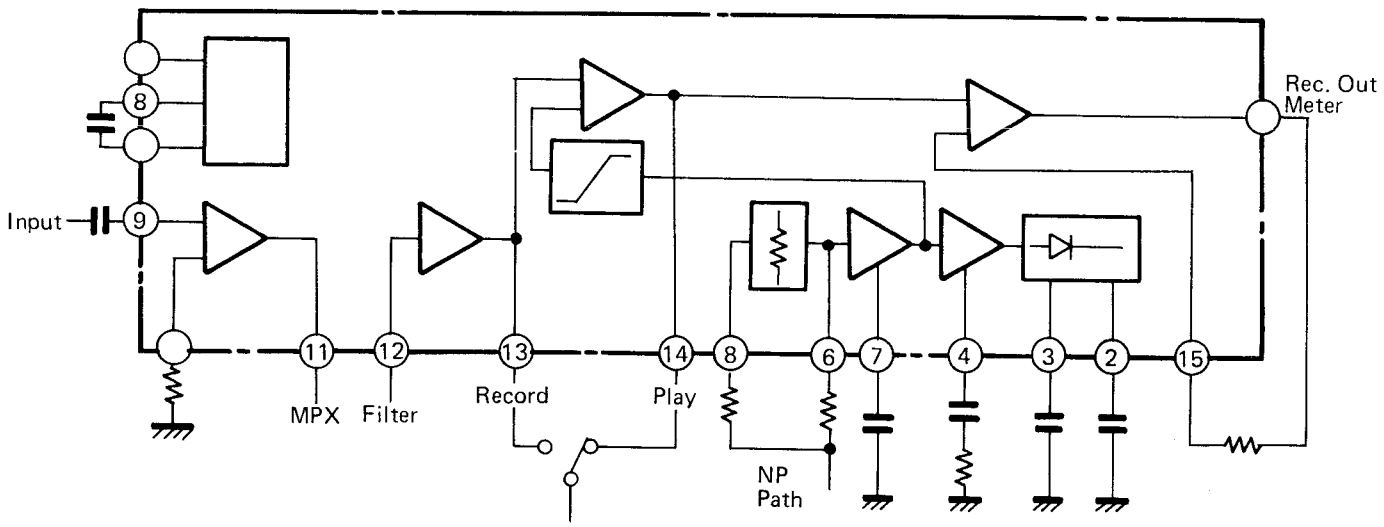
Ref. No.	Part No.	Description	
Semiconductors			
IC1	KGE46799	IC	LA3160
IC2	KGE46849	IC	AN6552
IC3	KGE46850	IC	BA336
IC101,201	KGE46523	IC	μA7300
IC102,202	KGE46851	IC	BA683
Q101,102,103 201,202,203	KGE46147	Transistor	2SC945 (K)
Q501	KGE46452	Transistor	2SC1173 (O)
Q503	KGE46717	Transistor	2SC2001 (K)
Q504,505	KGE46803	Transistor	2SC2274 (F)
D101,201,504 508,509,510	KGE46465	Diode	1SS53
D102~108 202~208 502,503,506 511	KGE46847	LED (green)	SG235D
D109~111 209~211 507	KGE46848	LED (Red)	SR535D
D501	KGE46313	Zener diode	RD22EB
D505	KGE46096	Diode	1N4001
D512	KGE46487	Rectifier	W005

C800 INTEGRATED CIRCUIT INTERCONNECTION

LA 3160

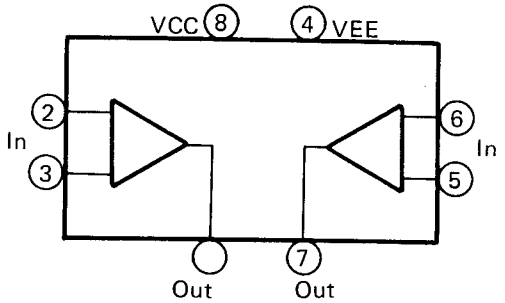


μA 7300

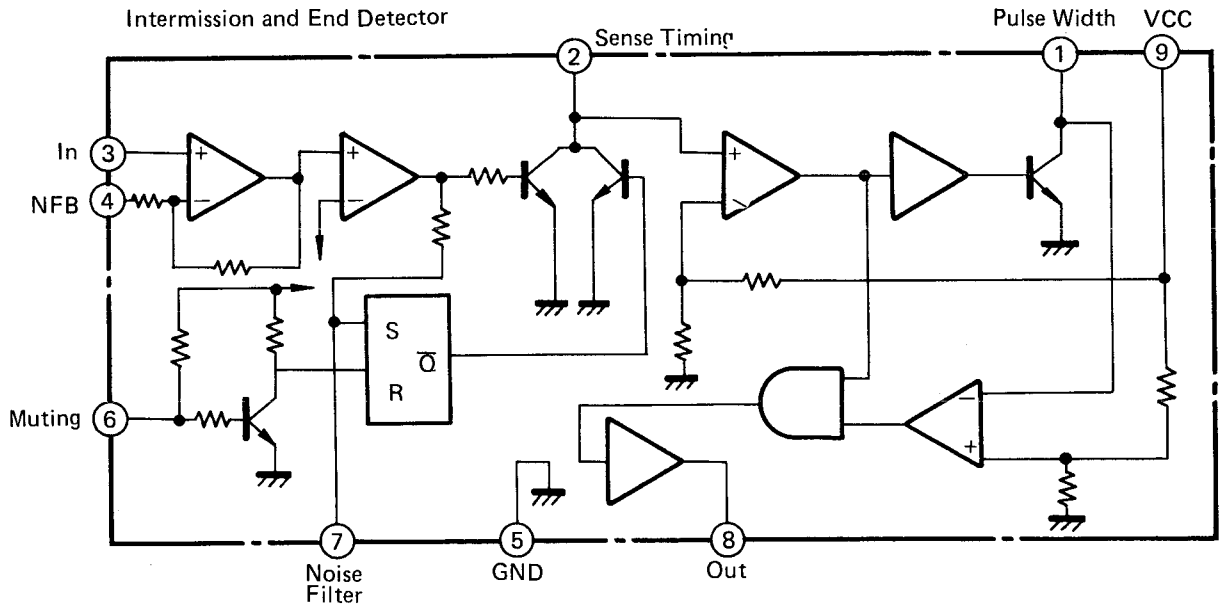


AN 6552

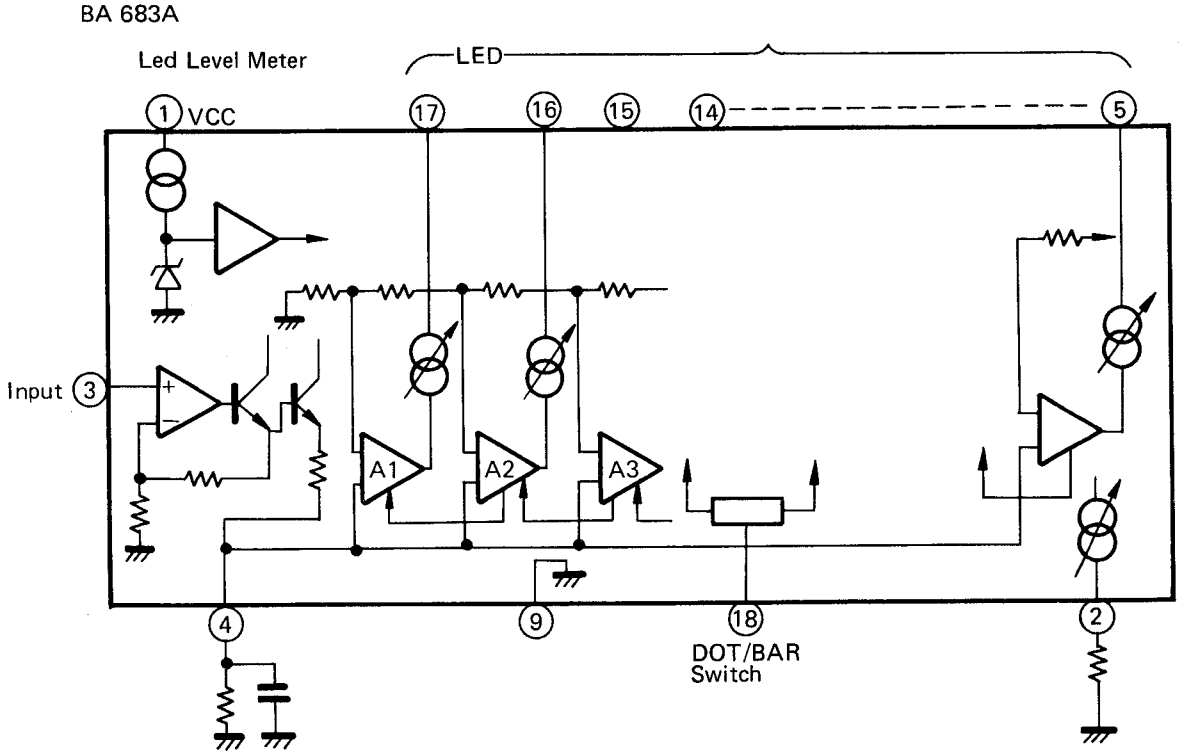
Dual Operational Amplifier



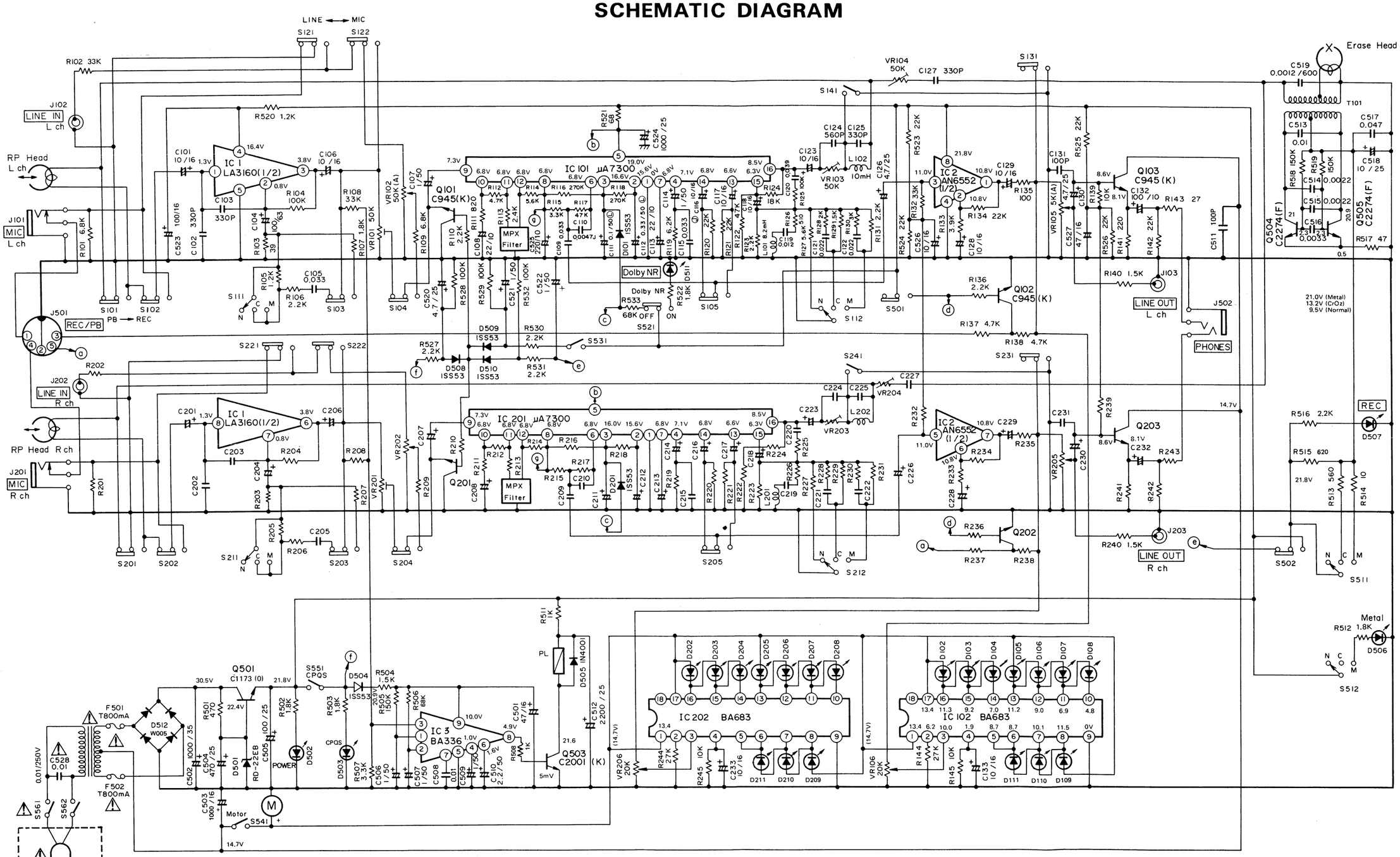
BA 336



BA 683A



SCHEMATIC DIAGRAM



S101 ~ 105	S201 ~ 205	S501 ~ 502	PB - REC SW	(PB - REC)
S111 ~ 112	S211 ~ 212	S511 ~ 512	TAPE Select SW	(Norm - CrO2 - Metal)
S121 ~ 122	S221 ~ 222		INPUT Select SW	(LINE - MIC / DIN)
		S521	Dolby NR SW	(ON - OFF)
		S531	FF (MUTE) SW	(ON - OFF)
S131	S231		FWD (MUTE) SW	(ON - OFF)
		S541 ~ 542	TAPE RUN SW	(ON - OFF)
		S551 ~ 552	CPQS SW	(ON - OFF)
S141	S241		REC MUTE SW	(ON - OFF)
		S561 ~ 562	POWER SW	(ON - OFF)